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The Engineering City Journal

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The purpose of the Journal is to disseminate knowledge, experience, and best practice in engineering & manufacturing.
The articles are written by practicing professionals in the Engineering City (EC) in Yerevan. They cover issues relevant to their projects, operations, and organizations.
The articles address the challenges of the time. As such, the Journal is also a chronicle of the evolution of the EC, its companies, and its individuals.
It is the aim of the Journal to advance the engineering & manufacturing practice, to enrich the engineering & manufacturing community, and to contribute to the worldwide discourse in engineering & manufacturing.

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Factory City Corner

Without Manufacturing, we'll be a Brain Without a Body

by Rama, Engineering Association



The Engineering Association was invited to join a panel discussion at the Yerevan Dialogue event that took place on May 5th. The title of the panel was - Critical Minerals, Semiconductors, and the South Caucasus as an Investment Frontier.

The following question was asked:

The Engineering Association has been making the case that Armenia needs to move from software and engineering services into high-tech manufacturing. With semiconductor supply chain resilience now a top U.S. national security priority, and companies actively looking to de-risk from Asia-concentrated production, does Armenia have a realistic path to becoming a location for advanced semiconductor manufacturing – not just design and R&D – and what would need to be true for that to happen?

You may want to watch the answer on the below youtube channel.



https://www.youtube.com/watch?v=NG8QInI_81Q&t=5749s
From 1:35:49

An article appeared on the www.news.am site under the title: *"Without Manufacturing, we'll be a Brain without a Body": Armenia at an Industrial Crossroads*. It has captured all the main points of our answer. You can find it here.

Below is the text of the article.

Armenia is perceived today as a country with a strong engineering school and notable technological achievements on the global market. However, according to Aram Salatian, President of the Engineering Association of Armenia, the country is currently facing a key strategic choice: will it remain a development center or manage to transition to industrial manufacturing?

Ideas Without Monetization

Speaking at the Yerevan Dialogue 2026 forum, Salatian emphasized that the engineering sector in Armenia has already reached a high level. Complex, globally competitive products are being created here—ranging from software solutions to high-tech electronic developments. Yet, despite this success, a major question remains unanswered: where exactly is the primary added value being formed?

According to him, a significant part of the Armenian engineering ecosystem currently operates within the logic of research and design, while the industrial stage—the production of the final product—remains outside the country. This creates a structural imbalance where Armenia generates ideas and technologies but does not participate in the full cycle of their monetization.

Service Economy and the Risk of "Brain Drain"

Salatian puts it quite bluntly: any engineering product only becomes a full economic value when it reaches factory production. Otherwise, the country risks being cemented in the role of a "design house"—a development center without an industrial core. In such a model, he warns, the economy remains service-based and loses a significant portion of its potential income.

Furthermore, there is a more long-term risk. If the country does not develop manufacturing, engineering talent will gradually migrate to places where this stage already exists. Thus, the country could face not only economic erosion but also the erosion of its existing engineering school's human capital.

The First Step: Developing the OSAT Segment or Niche Directions

Speaking about the semiconductor industry, Salatian noted that Armenia already has serious achievements in several areas—chip design, EDA tools, testing, validation, and measurement. Moreover, companies are already operating in the country that perform complex engineering tasks for international clients. However, in his words, this is still not a full-cycle industry.

He suggests two realistic paths for entering manufacturing. The first is the development of the OSAT segment (Outsourced Semiconductor Assembly and Test), which involves the assembly and testing of microchips. This is the final stage of semiconductor production; it does not require the most advanced technological processes but allows the country to integrate into the global industrial chain. The second path involves developing niche directions—optical, radio-frequency, and power chips, where the global industry is experiencing a shortage and the requirements for technological nodes are lower than in cutting-edge processors.

The Need for an Ecosystem

However, Salatian stresses that even these directions cannot be solved solely by creating individual enterprises. An ecosystem is required—an industrial-technological environment where production, engineering services, equipment, and infrastructure are combined into a single system. He proposes a "factory city" model, where lowering barriers to entry, shared infrastructure, and a concentration of competencies allow for an accelerated transition from development to production.

A special role, he says, should be played by so-called anchor companies—large international players capable of launching an industrial ecosystem around themselves. Historically, he notes, it was such companies that became growth points for Armenia's engineering sector, and a similar effect is possible in manufacturing.

Ultimately, as Salatian emphasizes, this is not just about developing a specific industry, but about choosing an economic model as a whole. Armenia has already proven that it can create technologies. Now the question is whether it can turn this advantage into a full industrial cycle—or if it will remain a country where ideas are born, but products are not made.

Text in Armenian here, in Russian here.

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